

**BUILDING THE DATA-DRIVEN** 

MANUFACTURING ECOSYSTEM

IoT Manufacturing Execution Platform (IMEP)



# The future of Industry 4.0 is now



# Despite the potential of Industry 4.0,

91%

of midsize and larger manufacturers face major hurdles to digital transformation

- 2019 Survey by Dell Technologies

# ADOPTION BARRIERS

Manufacturers
continue to face
formidable challenges
in digitizing their
production operations.



# Costs Too High

Most all digital systems in the market are cost prohibitive, much too expensive and are massive packages that we don't need or can't afford.

### Difficult to Use

Toolsets in the market are not user friendly, difficult for our team to learn how to use and to maintain in the long run.

## Lack of Skillsets

Our workers are not trained to use the tool properly and the toolset is not easy to learn how to use and requires too much enforcement.

# What end Customer Problems are we Solving?



How can I

meet rising requirement on product quality?



How can I

better PREDICT AND Reduce Downtime?



How can I

optimize factory operation for higher throughput?



How can I

leverage latest technology for better business outcomes?

How can I STAND OUT IN COMPETITION in my industry?

Data analytics driven by AI are transforming Industrial segment Insights are generated from basic/operational analytics to more advanced analytics.

# THE PATH TO DEEPER INSIGHT

Advanced Analytics

Prescriptive Analytics

Self-Learning
How Do I Proceed?

Cognitive Analytics

Forecast

How Should I Proceed?

Foresight

Predictive

**Analytics** 

What Will Happen, When, and Why

Descriptive Analytics Insight
What Happened and Why?

Diagnostic

**Analytics** 

Hindsight What Happened?

AI

IS THE DRIVING FORCE

Industrial players at different Edge AI Maturity level has different needs

-Industrial 4.0 Edge AI Maturity Model for consolidated analytics



Vision/Time series Analytics

**Edge Compute** 

Vision/Time series Data Ingestion

Visualization tools

"Connect the Unconnected"

- Connect things and collect data
- Visualization

Condition Monitoring

- Anomaly Detection
- Defect Detection
- Compliance monitoring
- Digital twin

Operational Optimization

Optimize operation effectiveness/costs /health and asset performance:

- Worker safety
- Factory productivity

**Predictive** 

Predicts outcomes/failures:

 Predict product quality, equipment maintenance, yield, cost Analytic outcome->Prescriptive action

Deterministic control/Orchestration

Real Time Prescriptive

Recommends corrections on low latency:

deterministic control

Autonomous

**INDUSTRY** 

Factory is self learning and adapting

**ACT** 

THINK

# The IMEP Solution Development Strategy



#### Edge I/O Device









#### **Edge-to-Cloud Services**

- Integrated edge agent to cloud services
- Remotely mass deployment































#### Control I/O & Sensors

- Provided by iDOOR Technology
- New Tech. & Specific-domain application incubation

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### **Edge Software**

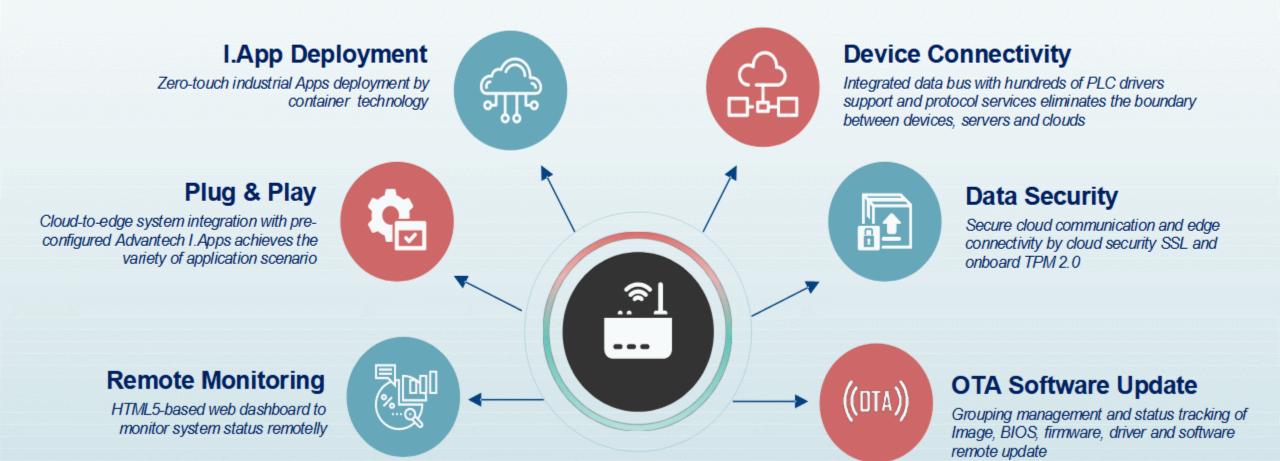
- OT components connected with protocol convention software
- 3rd party ISV partners collaboration & standardization

WISE-EdgeLink

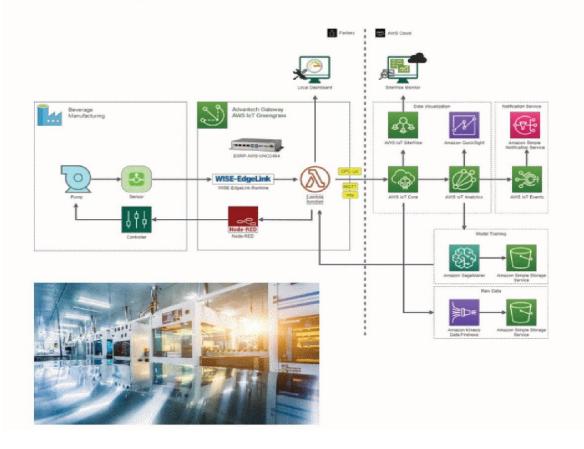
WISE-PaaS/SCADA



# The IMEP Intelligence Functionality



# Optimize Manufacturing with The IMEP



#### Problem

Food & beverage manufacturing process involves a complex series of sequential steps that can exacerbate quality problems. The ability to respond in real time to any issues that arise is required in order to prevent interruptions and ensure reliable operations.

#### Solution

The IMEP of the AWS series products were deployed to improve operations. WISE-Edgelink was used to collect data from numerous sensors. The data was then analyzed using an AWS IoT SageMaker AI model to determine suitable responses to real-time production line problems

#### Impact

Massive amounts and types of sensor data were collected by WISE-Edgelink and used for Al model training. AWS IoT SageMaker and SiteWise were used for equipment monitoring to achieve failure prediction and real-time management of all production processes.

# KEY BENEFITS

### **END-TO-END VISIBILITY**

of all manual production processes in real-time

### **COST REDUCTION**

through the discovery and elimination of wasteful processes

### DAY INSTALLATION

forge into Industry 4.0 at a speed with which the manufacturing landscape has never seen

### EAL-TIME TRACEABILITY

to oversee facility operations in real-time globally

#### **FULL DIGITISATION**

to eliminate inefficient paperbased workflows

### **DATA SECURITY**

through full ownership over onsite data or cloud instances

# POWERED BY MES Standard MEP





### **Workflow Builder**

Enables facility wide creation and management of workflows allowing for real-time monitoring of personnel, resources and equipment

# **Equipment Monitoring**

Basic toolset for real-time equipment monitoring; Fully synced to workstation control and dashboard viewing for dashboard generation

### **Production Scheduler**

Basic toolset for real-time scheduling, creation of work templates, generation of runs; Fully synced to personnel workstations

### **Personnel Management**

Basic solution to track personnel in realtime; Fully synced to workstation control and dashboard viewing for dashboard generation

### **Workstation Control**

Real-time workflow monitoring through any browser-based devices with full step timing, QC, resources, drawings and personnel tracking

### **Dashboard Viewing**

Charting toolsets for basic and advanced visual dashboard viewing with fixed preset templates

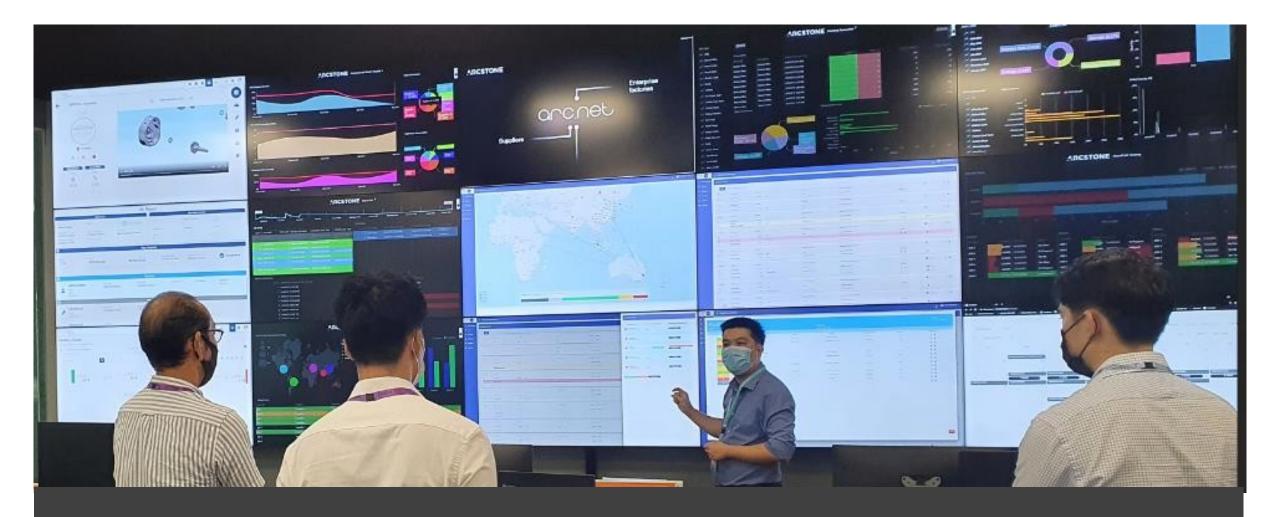
## **Inventory Management**

Tracks utilization of all raw materials throughout the entire production process from incoming inventory to WIP to finished goods

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### DIY or Supremesoft Support

Supremesoft's solutions installations are fully DIY or you could contact Supremesoft for installation and training support. Support packages can be purchased as required



We digitally run factories

&

connect them across the entire supply chain

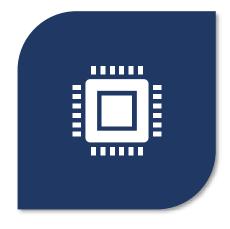












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P3-3A, Shaftsbury Square, Persiaran Multimedia 63000 Cyberjaya, Selangor, Malaysia Schedule for technical consulatation

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info@supremesoft.com.my



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